


28 November 1962

NRO REVIEW COMPLETED

To: Dr. Scoville

Subject: A-12 Performance with Various J58 Engine Ratings

Reference: 1. 

2.
3.
4.

Dear Peter:

It was not possible to answer, through the normal commo system, the questions you raised regarding performance of the A-12 with various thrust ratings of the J58 engine. Therefore, I am enclosing curves to show the performance data requested.

Some explanation of these curves is necessary. As a basis for reference, the specification performance is shown as the SP-237A curve. There are three factors which degrade the performance of the current engine compared to the basic specification. These are (a) the loss of thrust, particularly at altitude, (b) the increase in specific fuel consumption at a given thrust, and (c) the fact that the engine is not swallowing enough air at high Mach numbers to provide minimum drag for the nacelle. This increment is indicated on the curves as the spillage drag due to reduced engine air flow.

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The summary table attached is a numerical comparison of the thrusts and specific fuel consumptions for the three different engine configurations. I believe this table is self-explanatory.

We have not computed the range for these various conditions, and it should be borne in mind that the added engine weight requires flying at a higher gross weight with a given amount of fuel. Based on very sketchy information to this point, there is some indication that the basic airplane drag may be from 2 to 4% under our specification values. If this is borne out later, it would mean we could meet the range requirement and still haul the higher engine weight with a 2% poorer specific fuel consumption.

Sincerely,

Kelly

Attachments

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